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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HARTMAN JR, RONALD D

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 08/27/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,377

Applicant(s)

HSIUNG ET AL.

Examiner

Ronald D Hartman Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 63-144 is/are pending in the application.
- 4a) Of the above claim(s) 63-113 and 131-144 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 114-130 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6, 7, 10. 6) ☐ Other: _____

DETAILED ACTION

1. By way of the Election made via Amendment C filed on 8/5/2003, in response to the Restriction Requirement mailed on 7/15/2003, claims **63-113** and **131-144** have been canceled (withdrawn from consideration) and therefore, an action appears below on the merits of remaining and pending claims **114-130**.

Priority

2. Priority has been granted, and therefore the effective filing of the instant application is 3/10/2000.

Claim Objections

3. Claims **120**, **124-125** and **127-128** are objected to because the preamble of the claim should be rewritten as follows: "The system of claim **114**, wherein the processing module further comprises:"

Claim Rejections - 35 USC § 112

4. *The following is a quotation of the first paragraph of 35 U.S.C. 112:*

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

*Claims **114-130** are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling with respect to the following features:*

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5. As per claim **114**:

- a networking module is not supported in the specification and is therefore viewed to be “a means by which signals may pass from the sensors to an integration module”; and
- an integration module is not supported, and the examiner can find no reference whatsoever to “integrating data”. Therefore, this feature is viewed to be “a time correlation means for correlating data obtained from the sensors”; and
- a preprocessing module is not supported by the specification. The examiner notes that on pages 27 and 78, reference is made to different types of preprocessing techniques, but nowhere is a “preprocessing module” ever mentioned in the specification. Therefore, this feature has been interpreted to be “a means by which the system can be trained or any means by which the state of the system can be ascertained using the data obtained from the sensors”; and
- a processing module is not supported by the specification as filed. This feature has been interpreted to be “a means by which comparisons (such as pattern recognition) takes place using data obtained from the sensors”.

6. Furthermore, the following features of claims **119-121, 123-128 and 130** are not supported by the specification as well:

- “non-permanent sensors”, a storage module, an application module, a generation module, a model generation module, a neural network analysis module, “ a module for transmitting a portion of said integrated data to a data

interpretation system", a diagnostic module, "a module for identifying an event producing at least one of a chemical, biological and radiation stimulus", "modules for providing a notification regarding an occurrence of an event", "modules for initiating follow-on actions", "said pre-existing monitoring system", a "short range transceiver node", a "local hub" and a "long range transceiver hub". It is noted that support is found for I/O modules, but not specifically for the following previously listed modules.

7. As per claim **120**, since support for most of the claim limitations is lacking (with respect to the specification), the claim has been interpreted to essentially claim the following features:

- a storage means where a model of the system is stored;
- a means by which a comparison is made to the model using data obtained from the sensors; and
- a means by which a description of the state of the system is generated using the comparison means.

8. As per claim **130**, since support for most of the claim limitations is lacking (with respect to the specification), the claim has been interpreted to essentially claim the following features:

- a means by which communications can take place locally and globally over a small and large type communications network.

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9. *The following is a quotation of the second paragraph of 35 U.S.C. 112:*

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 119, 122 and 130 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim **119** is rejected because it refers to "non-permanent sensors", and the examiner is unsure as to what exactly is "non-permanent" about the sensor. Therefore, since this is not clear and there does not appear to be support for this feature (See 112^{1st} Rejections above), this claim will not be further treated on the merits with respect to the prior art since no meaningful comparison can be made.

11. Claim **122** is rejected because it refers to "the environment" in line 3. There is lack of antecedent basis for this limitation in this claim.

12. Claim **130** is rejected because it refers to "said pre-existing monitoring system". There is lack of antecedent basis for this limitation in this claim.

Claim Rejections - 35 USC § 103

13. *The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:*

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 114-115, 117 and 124-129 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross et al., PCT Publication WO 97/49011; having an international publication date of 12/24/1997, in view of White et al., U.S Patent No. 5,586,066; having an effective filing date 6/8/1994.

14. As per claim 114, Gross teaches a monitoring system comprising:

- chemical and biological sensors (***e.g. claims 22 and 30***);
- a means by which signals may pass from the sensors to an integration module (***inherent to Gross since the signals must use some means by which communications from the sensor to the monitoring system can effectively take place***);
- a time correlation means for correlating data obtained from the sensors (***e.g. page 7 line 23- page 8 line 8 and Figure 1 element 20***); and
- a means by which the system can be trained or any means by which the state of the system can be ascertained using the data obtained from the sensors (***e.g. page 8 line 9 – page 9 line 27; Figure 1 elements 30 and 40***) for future processing by a processing module (***e.g. page 10 line 23 – page 11 line 6; Figure 1 element 50***).

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15. As per claim **114**, although Gross teaches the use of his disclosed system within industrial process surveillance systems, he fails to specifically teach the use of and radiation (temperature) sensors.

White teaches the use of a industrial process surveillance system wherein parameters such as temperature, biomedical information and chemical composition are monitored by a plurality of sensors (*e.g. C2 L58-67*).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have allowed for the incorporation of specific sensors, as described by White, into the disclosed system of Gross since they are from analogous art. That is, they both aim to achieve the same goals of accurately monitoring an industrial process system by providing feedback from a plurality of sensors, and both using pattern recognition as a means of achieving this goal. Therefore, since temperature, chemical and biological sensors are all features that are known to be parameters in need of constant monitoring in industrial process systems, their incorporation, as taught by White, would be obvious into Gross since both inventions aim to achieve accurate monitoring of all aspects of industrial processes.

16. As per claim **115**, Gross does not specifically teach “a chemical sensor reacting to the presence of a vapor, gas, liquid, solid, odor or mixtures thereof”.

White teaches a system whereby the “chemical compositions” are monitored in an industrial process system (*e.g. C2 L58-67*).

Therefore, since sensing of parameters associated with chemicals (e.g. From the presence of a vapor, gas, liquid, solid, odor or mixtures thereof) is inherent to the use of chemical sensing, this feature would obviously be incorporated into Gross for at least the same reasons given with respect to claim 114. In short, they are both from analogous art.

17. As per claim 117, Gross's combined system (Gross in view of White) does not specifically teach a radiation sensor reacting to the specific stimulus' listed in the instant claim. However, since White teaches that sensors for sensing a wide range of parameters associated with a wide range of applications, ranging from biomedical to power levels, a feature whereby a sensor possesses the capability to react to the stimulus' claimed (e.g. such as X-rays) is believed to be a feature that would be obvious to one of ordinary skill in the art at the time the invention was made when considering a sensors use within a biomedical monitoring environment (contemplated by White). That is, since X-rays are well known processes that take place in a biomedical environment (e.g. hospital), and since the monitoring of X-ray output levels is critical to the safety of the patient being exposed to the X-ray, a feature whereby a sensor can monitor these levels and provide this data to a central controlling/monitoring source would be obvious since it would provide an effective way of monitoring the outputs of the system to ensure the safety of a person (e.g. such as the operator or patient of the X-ray system), a desired feature of Gross' combined system.

18. As per claim 120, Gross further teaches:

- a storage means where a model of the system is stored (*e.g. database; page 11 lines 26-31*);
- a means by which a comparison is made to the model using data obtained from the sensors; (*e.g. taught as comparatively determining the current state of operation for the system; page 9 lines 9-13 and page 9 line 28 – page 10 line 5*); and
- a means by which a description of the state of the system is generated using the comparison means (*e.g. page 9 line 28- page 11 line 31*).

19. As per claims 121-123, Gross teaches that the state estimation module can incorporate the functions of a neural network (*e.g. page 8; 4th paragraph*).

20. As per claims 124-129, "transmitting a portion of said integrated data to a data interpretation system", a "diagnostic" feature for identifying events in the system, notifications for alerting operators of the occurrence of events, recommendations for follow up actions, and correction means are all features that are either inherent to Gross, or are at least obvious variations thereof since this is generally the aim and scope of Gross; that is, a system that gathers data from sensors, uses information (such as models) such in a memory to compare to the data to determine if the system is operating correctly, and if the system is not operatively correctly, either an alert is made (a strict one way monitoring system) to an operator and/or an action is taken that

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reduces the likelihood of further complications in the process system (monitoring and control system). Therefore, since all of the features of the instant claim appear to parallel that of Gross's disclosed system and its capabilities, their incorporation is obvious and would have been so to one of ordinary skill in the art at the time the invention was made for at least these reasons.

21. *Claim 116 is rejected under 35 U.S.C 103(a) as being unpatentable over Gross in view of White, as applied to claim 115 above, and in further view of Official Notice.*

22. As per claim 116, Gross's combined system (Gross in view of White) does not specifically teach a particular type of chemical sensor. However, Official Notice is taken with respect to the use of integrated circuits for use in sensing devices. The incorporation of integrated circuitries for sensors is a well known improvement over analog sensing devices since the use of integrated circuitries allows for digital communications, and the ability for the sensors to perform their own calculations, thereby alleviating the amount of data needed to be sent to the analyzing portions of the industrial process system. Therefore, since Official Notice is taken with respect to integrated circuits being used in sensing devices, a feature whereby a MOSFET is used in a chemical sensors is inherent, or at the very least, an extremely obvious variation/implementation of a sensing device incorporating integrated circuits.

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23. *Claims 118 and 130 are rejected under 35 U.S.C 103(a) as being unpatentable over Gross in view of White, as applied to claim 114 above, and in further view of Freitas, U.S Patent No.4, 149,237; having an effective filing date of 9/16/1977.*

24. As per claims 118 and 130, Gross' combined system does not specifically teach the use or ability of his disclosed industrial process system to incorporate the ability to communicate using wireless technologies and that the communications take place on a local and global scale.

Freitas teaches the use of wireless transmitter/receivers to be used in conjunction with individual sensing devices (**abstract**) for use in an industrial process control system and a means by which communications can take place locally and globally over a small and large type communications network is adequately taught by Freitas (**e.g. Figure 1 and C3 L14-57**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have allowed for Gross's combined system to incorporate the teachings of Freitas, wherein the combined system of Gross would thus be able to implement wireless communications with the individual sensors since it would cut down the cost of the overall system by eliminating the need for expensive cables.

Conclusion

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald D. Hartman Jr. whose telephone number is (703) 308-7001. The examiner can normally be reached Monday-Friday, 11:30 am – 8:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri, can be reached at (703) 305-0282. The fax number for this examiner is (703) 746-5408.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9618.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 746-7239, (for formal communications intended for entry)

Or:

(703) 746-7240, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Ronald D. Hartman Jr.
Patent Examiner
Art Unit 2121
August 20, 2003


ANIL KHATRI
PRIMARY EXAMINER